Satellite StreetView™

Version 2008

A Product User Manual

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A Location Intelligence Company

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About DMTI Spatial

DMTI Spatial™ Inc. is Canada's leading Location Intelligence provider. We enable users to understand their customers, optimize resources, realize opportunities, maximize profitability and make more informed decisions through accurate products and innovative thinking.

DMTI Spatial publishes precision built street map, rail and routing data (CanMap®), a detailed water layer, and innovative geocoding and address management software (GeoPinpoint™). In addition, DMTI Spatial publishes a full range of positionally accurate geospatial data products including: enhanced points of interest (EPOI), census data and boundaries, postal geography, topographic maps, and US mapping data. As part of a complete business geographic solution, DMTI Spatial™ offers a wide range of GIS services, consulting, and software training.

Established in 1994, DMTI Spatial is committed to setting the standard within the GIS industry for precision built geo-spatial data and address management services.

At DMTI Spatial, we believe that our true strength comes from working closely with our customers and providing innovative solutions to meet their strategic business objectives. As Canada's premier spatial solutions provider we pride ourselves with having worked with North America's leading organizations to support their mission critical applications.

DMTI Spatial works with large and small organizations representative of a wide variety of industries:

- Agriculture
- Banking/Finance
- Consulting
- Education
- Emergency Services
- Engineering
- Environmental
- Forestry
- Government
- Health
- High Technology
- Insurance
- Manufacturing
- Media
- Mining
- Real Estate
- Retail
- Telecommunications
- Transportation
- Utilities

We are a member of the ESRI Canada Business Partner Program, and winner of the 2001 ESRI Worldwide New Business Partner of the Year Award and the 2005 ESRI Foundation Partner of the Year Award. We are a strategic business partner of MapInfo and winner of the Markham Board of Trade 2000 Award for Entrepreneurship and Innovation. Recipient of The Association of Canadian Map Libraries and Archives (ACMLA) 2002 Certificate of Appreciation.

ESRI Canada Business Partner

MapInfo® Business Partner

Really Smart Spatial Solutions™

Through the application of its products and services, DMTI Spatial™ has been involved with projects such as: location-based services, logistics planning, emergency dispatch, facilities management, data management, customer care, address management, land base development in support of network planning, and marketing/demographic analysis applications.

DMTI Spatial™ can provide all of the components necessary for the acquisition, implementation, operation and maintenance of a successful GIS system within companies of all sizes. Through its product and service offering, DMTI Spatial™ can provide users with 5 key components:

1. Accurate, detailed, and compatible data
2. Comprehensive maintenance program
3. GIS software
4. Consulting and services
5. Software training

DMTI Spatial™ Product & Service Portfolio

DMTI Spatial's product & service offering includes:

CanMap® - *Digital Map Data for Canada*
- CanMap® Streetfiles
- CanMap® RouteLogistics
- CanMap® Rail
- CanMap® Major Roads and Highways
- CanMap® Parks & Recreation
- CanMap® Water

Satellite Imagery
- Satellite StreetView™

Municipal Amalgamations
- CanMap® Municipality Amalgamation File (MAF)

Business & Recreational Points of Interest
- Enhanced Points Of Interest (EPOI)

GeoPinpoint™ Suite
- Canada's Geocoding Solution
- Modular Architecture
- Windows Standalone Desktop Version
- UNIX, Java Wrapper, ActiveX (DLL Version)

Topographic Data and Base Maps
- Canadian Atlas Map Bundle (CAMB)
- Populated Placenames
- National Topographic Data Base (NTDB)
- 30 & 90m Digital Elevation Models (DEM)
- Clutter Data

Postal Geography & Data
- Six-Digit Postal Code File (LDU Boundary)
- Enhanced Postal Code File (MEP)
- Forward Sortation Areas (FSA) Boundary File

1996 Census Boundaries & Demographic Data
- Enumeration Area (EA)
- Census Subdivision (CSD)
- Census Division (CD)
- Census Metropolitan Area/Census Agglomeration (CMA/CA)
- Census Tract (CT)
- Federal Electoral Districts (FED)

2001/6 Census Boundaries
- Dissemination Area (DA)
- Census Subdivision (CSD)
- Census Division (CD)
- Census Metropolitan Area/Census Agglomeration (CMA/CA)
- Census Tract (CT)
- Federal Electoral Districts (FED)

GIS Software
- Contour Modeling and Display
- Demographic Profiling and Lifestyle Targeting
- Geocoding and Mapping Software
- Routing and Logistics

Consulting and Services
- Address Management Solutions
- Application Development
- Database Marketing
- Data Conversion and Creation
- Database Scrubbing
- Geocoding Services
- GIS Consulting
- Technical Support

Technical Support, Error Reporting & Product Enhancement Services

DMTI Spatial is committed to building the best products possible for our customers. By using our data every day in your mission critical application you are our best source for product refinement. Please let us know if you have an enhancement request or found an error in any of our products so that we can make the correction for the next release.

This is your opportunity to provide feedback directly to the DMTI Spatial Product Development Team. Please be as specific as possible so that we can improve our products quickly and accurately. To submit an error or request technical assistance please visit: http://www.dmtispatial.com/support/

If you have an idea for a new product, or an enhancement request for an existing product, please visit our product manger's desk on the web at: http://www.dmtispatial.com/pm/
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Trademarks and Notices

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About Satellite Streetview™ V2008

Satellite Streetview™ Product Description

Satellite StreetView is an innovative new geospatial data product, which combines the spatial detail of high-resolution satellite imagery with the rich data content of a digital streetmap.

This product is an integrated dataset of orthorectified and seamless mosaicked QuickBird Satellite's pansharperned data combined with CanMap streets. It provides the highest commercially available spatial resolution satellite imagery at 60cm along with boundary and point data to ensure a full range of positionally accurate geospatial data products.

QuickBird Satellite Imagery Properties

The QuickBird satellite provides images in five bands, one **panchromatic band** and four **multispectral bands.** The **panchromatic band** has a spatial resolution of 60 cm and spectral resolution of 450 – 900 nm. The four **multispectral bands** have a spatial resolution of 2.44 cm, with spectral resolutions of blue: 450 – 520 nm; green: 530 – 600 nm; red: 630 – 690 nm; near IR 760 –900 nm.

Satellite StreetView image data is orthorectified and pansharpened to combine the colour information of the multispectral bands with the spatial information of the panchromatic band. The generated images are then mosaicked to ensure a seamless view of a particular coverage area.

Orthorectified Imagery Properties

The orthorectified imagery are radiometrically corrected, sensor corrected, geometrically corrected, orthorectified, and mapped to a cartographic projection and datum.

Digital elevation models (DEM) and accurate ground control points (GCPs) are used to orthorectify the satellite imagery. This removes the relief displacement and places each pixel into its correct, map location.

Table 1. Orthorectified imagery properties

Property	Description
Applied Corrections	▪ Radiometric ▪ Sensor ▪ Geometric
Image Processing	▪ Spatial mosaicking applied (images mosaicked to minimize seamlines) ▪ Color balance applied
Map Projection	UTM Zone
Datum	WGS84
Map Accuracy	1:10,000 ortho accuracy
Ortho Accuracy	5.15-metre RMSE (8.47-meter CE90%)

About Satellite Streetview™ V2008 (cont'd)

Tiling and Naming Conventions

Image Tile

Satellite StreetView imagery products are subset into tiles which size does not exceed 14,000 pixels by 14,000 pixels .

For users convenience, pixel-based grids define image tiles and the following is an example of a typical image tile specification:

Max Tile Size	Max File Size	Number of image bands	Bit Depth
17000 by 17000 pixels	932.51 MB	3 bands	8 bit

Tile Naming Conventions

Satellite StreetView imagery naming provides key information about the tile identification, acquisition date of the images used, area identification, product level and file format extension.

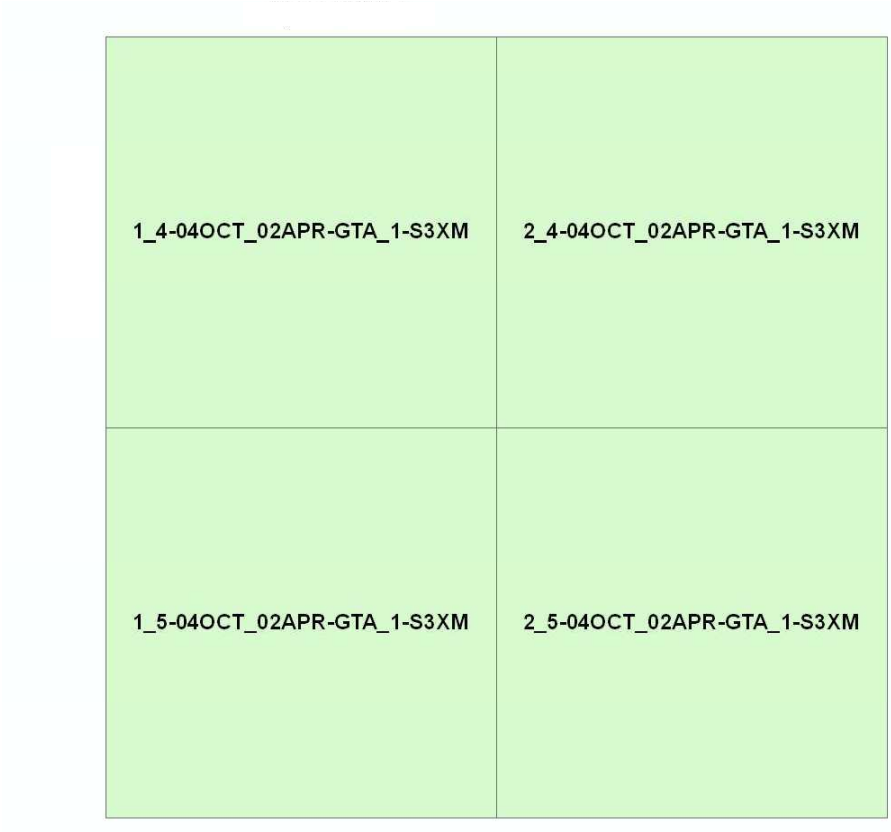


Figure 1. Final Product structure showing tile size and naming convention.

About Satellite Streetview™ V2008 (cont'd)

The image tile naming parameters are:

Tile Identifier	Acquisition Date Range	Area Identifier	Product Level	File Format Extension
1_1 = column1, row1 1_2 = column1, row2 2_1= column2, row1	02Apr_05May = oldest image date and most recent image date used in mosaic	Toronto_1 = Name of city or region followed by number of update indicator	S = Pan Sharpened 3X = Ortho 3G = DG Ortho M = Mosaic S= Single/Sub-scene	TIF = GeoTIFF

CanMap Street Files

Layer Properties

Property	Description
Coverage	National
Currency	2008
Level of Accuracy	Ranging from the National Topographic Data Base (NTDB) standard to sub-meter accuracy
Projection	All layers are displayed in UTM
Datum	All layers are in WGS84 datum
Format	ESRI and MapInfo[1]

[1] Custom formats available upon request. Refer to *Appendix A: ESRI File Extensions* and *Appendix B: MapInfo File Extensions* for more information regarding file extensions.

About Satellite Streetview™ V2008 (cont'd)

Directory Structure

Satellite StreetView products delivery consist of Satellite Imagery and CanMap Streetfiles with a set of metadata files for both for MapInfo® and ESRI® users.

File Description and Layout

This section describes the structure of the Satellite StreetView directories. Below is a tree diagram (figure 1) of the Satellite StreetView directory and a table listing (table 1) of it's content:

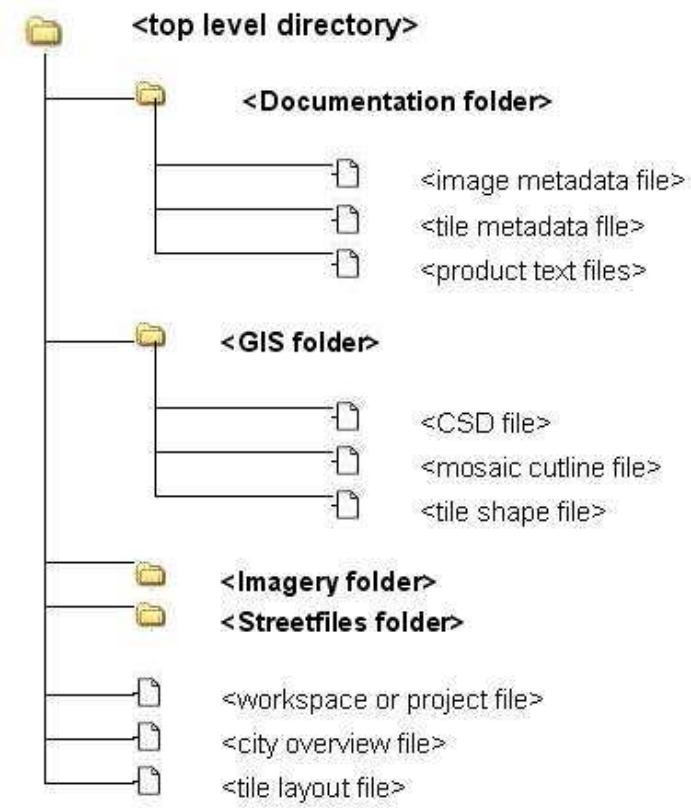


Figure 1. Directory Structure Tree Diagram

Directory Name	File Type	Description	File Extension
Documentation	Image Metadata File	Key attributes about the image product, image description, projection information and acquisition date	.TXT
	Tile Metadata File	Information about number of tiles included in the delivery with file names and centroid coordinates for each tile	.TXT
	License File	DMTI Spatial End User License Agreement	.PDF
	SSV_Product_Specifications	An overall view of the product in a tabular format	.PDF
	SSV_User_Manual	Information about the data used to generate the product and instructions for viewing the product in an GIS environment	.PDF
GIS_Files	CSD File	The Census subdivision boundaries covered by the SSV product extent	.SHP or .TAB
	Mosaic_Cutline	The mosaic cutlines used to generate the final image product	.SHP or .TAB
	Tile_Shape	Polygon description of each image tile	.SHP or .TAB
Imagery	Image File	Image tile	.TIFF
Streetfiles	Street File	CanMap Streetfiles	.SHP or .TAB
Layout Files	City Overview File	A compressed JPEG image showing the SSV image coverage with census subdivision boundary	.JPEG
	Tile Layout File	Compressed JPEG image showing the tile names with the SSV image coverage	.JPEG
	Product Overview File	File is either an ArcMap project file or a MapInfo workspace showing the product layout	.MXD or .WOR

Table 1. Directory Content

Using Satellite Streetview™ V2008

Viewing DMTI Spatial Products

Packaged with DMTI Spatial products are several custom viewing files for MapInfo® Professional, ESRI® ArcView® GIS and ESRI® ArcGIS®.

Software	Extension	Version Support
MapInfo Professional	*.wor	Version 4.5 and higher
ESRI ArcView GIS	*.apr	Version 3.0 and higher
ESRI ArcGIS	*.mxd	Version 8.1 and higher

Located in the product directory, these viewing files have been provided to maximize the ease of use of DMTI Spatial products by intelligently layering various data layers and displaying them based on appropriate viewing scales.

Viewing Satellite StreetView™ Imagery

This section provides instructions for viewing Satellite StreetView imagery products in ArcMap®, a part of ESRI® ArcGIS® suite and for MapInfo® Professional. Satellite StreetView imagery products are delivered in 8-bit image depth as both ArcMap® and MapInfo® Professional are able to load and display 8-bit imagery.

Viewing in ArcMap®

Satellite StreetView ESRI imagery TIFF files are provided with .RRD files to improve the performance and display quality of the raster dataset and .AUX files that stores any auxiliary information like statistical information, coordinate system, histogram for the raster dataset.

To view an image in ArcMap follows the steps.

- To view an image, click the ‘Add’ button and choose the image file to be displayed

Using Satellite Streetview™ V2008 (cont'd)

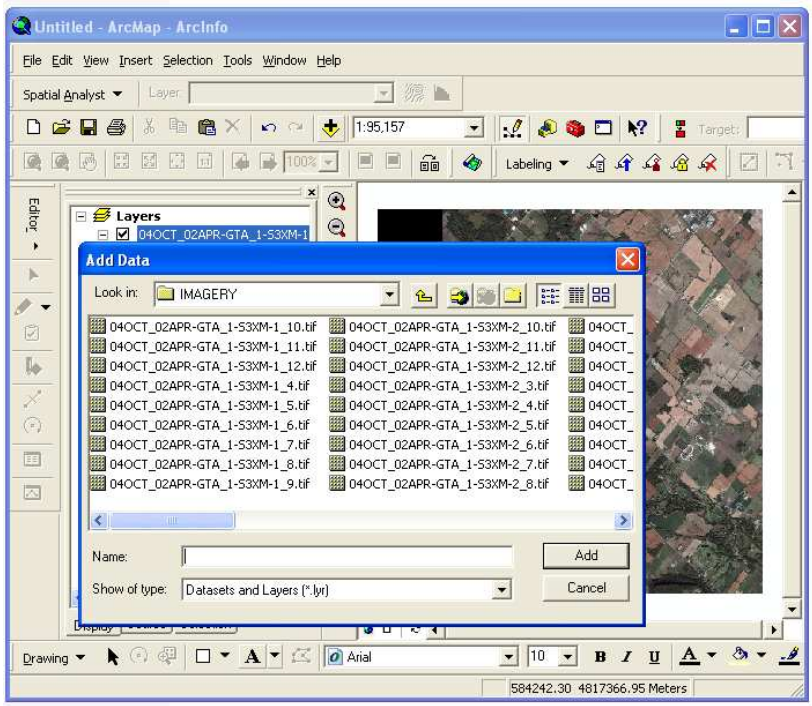


Figure 2. To view the image by clicking the Add button

If you wish to change the display quality of the image, here is an indication of the steps to be followed:

- Once the image is in the table of content, right click the image and select 'Properties' from the pop-up list.
- Layer Properties Dialog will appear. Choose the 'Symbology' tab.
- Make sure the default selection 'RGB Composite' is selected under the 'Show' box.
- Change the "Stretch' setting to any option other than 'None'.
- ESRI's online help provides description of each stretching option in detail. The purpose of this document is only to bring the image to a viewable state.

Using Satellite Streetview™ V2008 (cont'd)

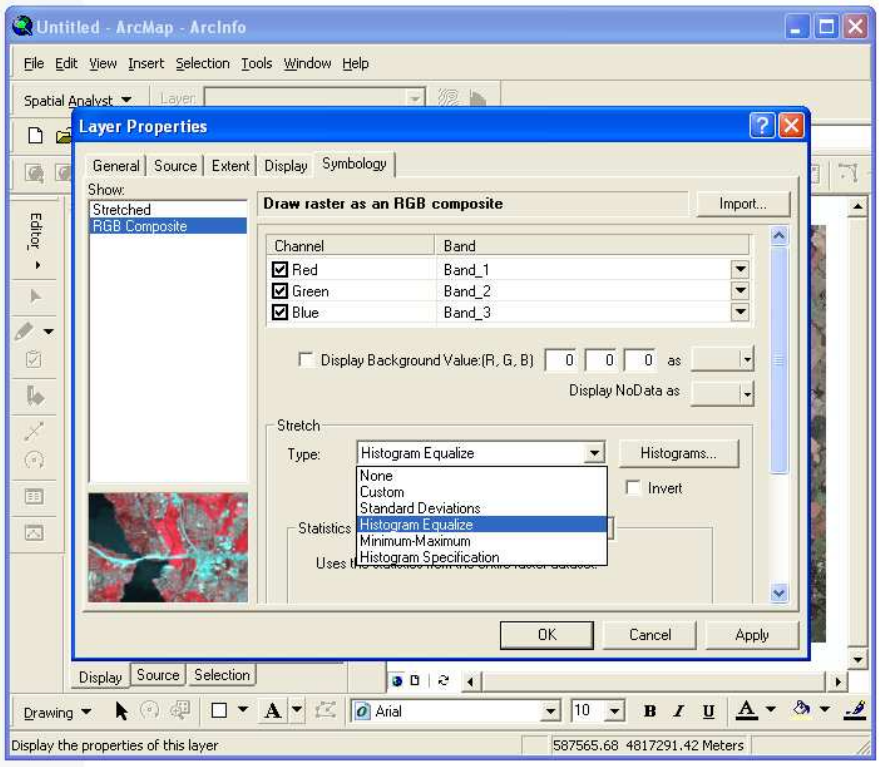


Figure 3. The Layer Properties Dialog box to change the display quality of an image.

Viewing In and MapInfo® Professional

Satellite StreetView imagery are provided in 8-bit image depth and can be loaded and viewed in MapInfo® Professional.

To view an image in MapInfo follow the steps.

- To view an image, click on the file 'Open' button and choose either the TIFF file or the TAB file provided.
- Once the image file is selected, right click to bring the 'Layer Control' panel.
- On the 'Layer Control' panel go to 'Display' and turn off 'Display within Zoom Range' and press 'OK' to display the image.

Using Satellite Streetview™ V2008 (cont'd)

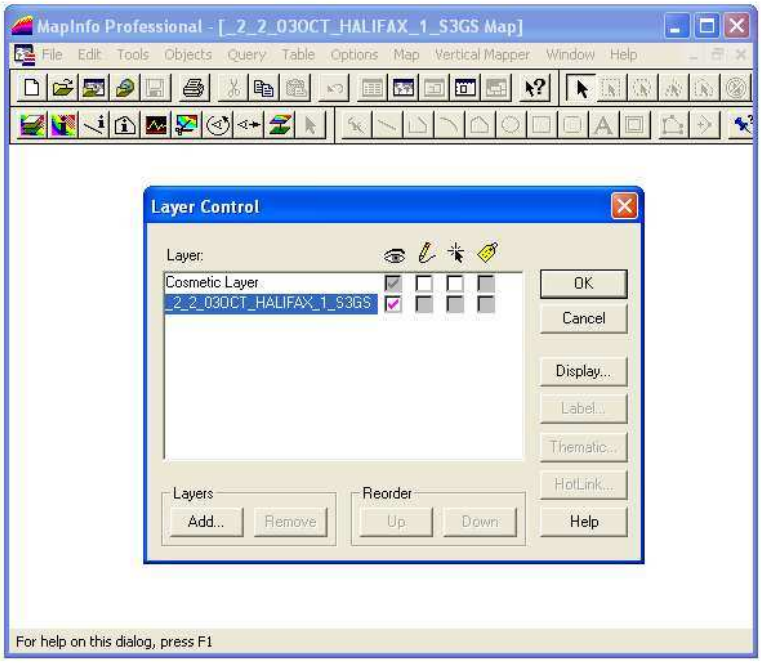


Figure 4. Use 'Layer Control' panel to display raster image.

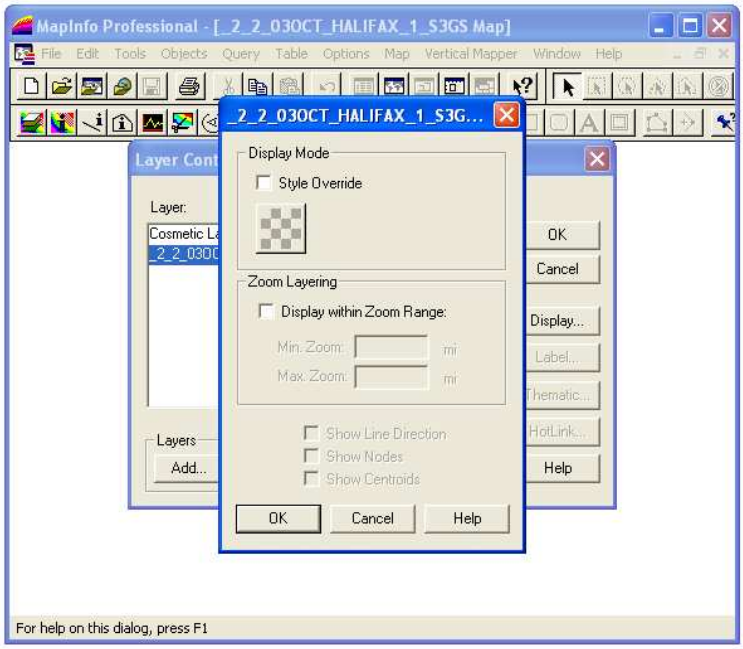


Figure 5. Turn off 'Display within Zoom Range' to display image.

Using Satellite Streetview™ V2008 (cont'd)

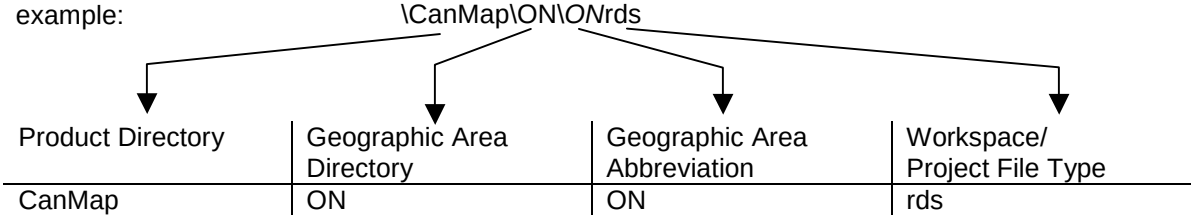
Viewing CanMap Streetfiles

There are currently two viewing files available for reference, mapping and analysis.

Filename	Description
*AREA*rds	Offers a limited number of files for reference purposes only. Opens and zoom layers capital cities, populated placenames, roads, major roads and highways, highways, municipality boundaries, and national water.

CanMap Streetfiles workspaces or project files are found in the product directory:

example: \CanMap\ON*ON*rds



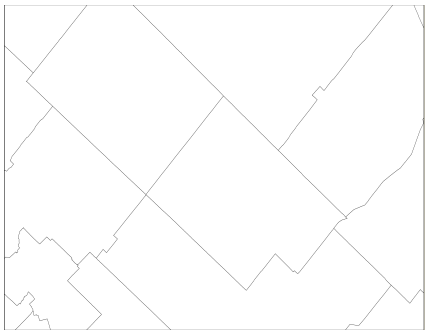
Product Directory	Geographic Area Directory	Geographic Area Abbreviation	Workspace/ Project File Type
CanMap	ON	ON	rds

Other CanMap layers

Layer	**Description**
rds_lut	Roads Lookup Table

Data Dictionary

Census Subdivision Boundaries



The CSD file contains the Census subdivision boundaries covered by the SSV product extent.

Layer Location

\Streets*DATE_AREA*_**csd**

Layer Structure

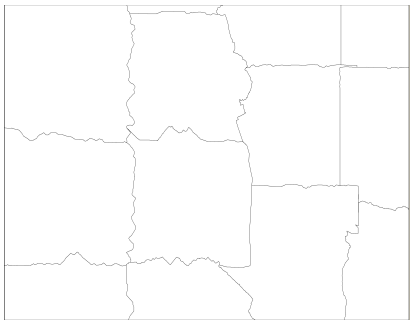
Field Name	Description
NAME	Census Subdivision Name
AREA_SQKM	Area (square kilometers) from Statistics Canada Land Base
PROV	Provincial/Territorial Abbreviation

Layer Content

The CSD file contains the Census subdivision boundaries covered by the SSV product extent. Census Subdivision (CSD) is the general term applied to municipalities or their equivalent and corresponds to the Statistics Canada 2001 Census Subdivisions. Municipalities are comprised of political administrative entities such as cities, towns, or villages.

Data Dictionary *(cont'd)*

Mosaic Cutlines



Layer Location

\Streets*DATE_AREA*_**mosaic_cutlines**

Layer Structure

Field Name	Description
IMAGE ID	Digital Globe Imagery file name
VINTAGE	Acquisition date of the imagery

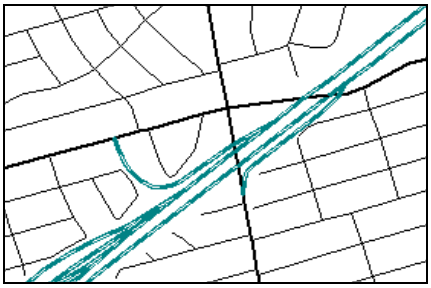
Layer Content

The mosaic cutline file is provided to give information about DigitalGlobe image file name and the vintage of the imagery. The file contains the mosaic cutlines used to generate the final image product.

Proprietary and Confidential to DMTI Spatial
Not to be disclosed

Data Dictionary *(cont'd)*

Roads (rds)



Layer Location

\Streets*AREA***rds**

Layer Structure

Field Name	Type	Size	Description
STREET[2]	Character	69	Street Title (comprised of PRETYPE, PREDIR, STREETNAME, SUFTYPE, SUFDIR)
FROMLEFT	Decimal	6,0	Address on the Left side at the From end of the street segment
TOLEFT	Decimal	6,0	Address on the Left side at the To end of the street segment
FROMRIGHT	Decimal	6,0	Address on the Right side at the From end of the street segment
TORIGHT	Decimal	6,0	Address on the Right side at the To end of the street segment
PREDIR	Character	2	Prefix Direction component of the Street Title (e.g. **W** 5 St)
PRETYPE	Character	10	Prefix StreetType component of the Street Title (e.g. **Rue** Jean)
STREETNAME	Character	45	StreetName component of the Street Title (e.g. **John** St E)
SUFTYPE	Character	10	Suffix StreetType component of the Street Title (e.g. John **St** E)
SUFDIR	Character	2	Suffix Direction component of the Street Title (e.g. John St **E**)
CARTO[3]	Decimal	3,0	Cartographic Road Classification
LEFT_MUN	Character	70	Municipality
RIGHT_MUN	Character	70	Municipality
LEFT_MAF	Character	70	Municipal Amalgamation
RIGHT_MAF	Character	70	Municipal Amalgamation
LEFT_FSA	Character	3	Forward Sortation Area
RIGHT_FSA	Character	3	Forward Sortation Area
LEFT_PRV	Character	2	Province (Abbreviation)
RIGHT_PRV	Character	2	Province (Abbreviation)
UNIQUEID	Decimal	9,0	Unique Identifier of Street segment

Note: Address fields contain only zeros in Unaddressed CanMap Streetfiles.

Field Content

Please note the Municipality (_MUN) fields are attributed with 2001 Census based Municipality names. 1996 Census based Municipality names can be obtained by linking the **rds** layer to the **rds_lut** layer via the UNIQUEID and RDS_ID fields. Also, all geocoding indexes have been created using 2001 Census based Municipality names.

[2] For more information refer to Appendix C: Street Types and Street Directions
[3] For more information refer to Appendix D: Cartographic Road and Rail Classifications

Data Dictionary *(cont'd)*

Roads Look Up Table (rds_lut)[4]

Layer Location

\Streets*AREA***rds_lut**

Layer Structure

Field Name	Type	Size	Description
RDS_ID	Decimal	9,0	UniqueId of related Roads (rds) segment
ALIAS_NAME	Character	69	Alternate Street Name
FORMERNAME[5]	Character	69	Former Provincial Hwy Name
HWY_NUM	Character	20	Highway Number(s) (e.g. Highway 404)
HWY_NUMNAM	Character	69	Road Numeric Name (e.g. Regional Rd 4)
HWY_NAME	Character	69	Highway Name Non-Numeric (e.g. Don Valley Pky)
RD_NUM	Character	20	Road Number (e.g. 4)
RD_NUMNAM	Character	69	Road Numeric Name (e.g. Regional Rd 4)
RD_NAME	Character	69	Road Name Non-Numeric (e.g. Taunton Rd W)
ALASKAHWY	Decimal	1,0	Alaskan Highway flag
CARIBOOHWY	Decimal	1,0	Cariboo Highway flag
CRWSNSTHWY	Decimal	1,0	Crowsnest Highway flag
DEMPSTRHWY	Decimal	1,0	Dempster Highway flag
JOHNHRTHWY	Decimal	1,0	John Hart Highway flag
KLONDKEHWY	Decimal	1,0	Klondike Highway flag
MCKNZIEHWY	Decimal	1,0	Mackenzie Highway flag
TRNSCDAHWY	Decimal	1,0	TransCanada Highway Flag
YELOWHDHWY	Decimal	1,0	Yellow Head Highway Flag
TOLL_RD	Decimal	1,0	Toll Road Flag
BRIDGE	Decimal	1,0	Bridge Flag
TUNNEL	Decimal	1,0	Tunnel Flag
BRUNNELNAM	Character	69	Bridge/Tunnel Name
TRAILNAME	Character	100	Trail Name
TRAILTYPE	Character	50	Trail Type
TRAILCLASS	Character	20	Trail Class
TRAILCODE	Decimal	4,0	Trail Code
L_MUN_96	Character	68	Municipality (1996 Census based)
R_MUN_96	Character	68	Municipality (1996 Census based)

[4] For more information on joining the rds_lut Table to the rds Layer refer to Appendix F: Joining the rds Layer and rds_lut Table
[5] Applicable only in Ontario

Data Dictionary *(cont'd)*

Trail Classes, Types and Codes

TrailCode	TrailType	TrailClass
1000	OTHER PARK	PARK
1001	NATIONAL PARK	PARK
1002	PROVINCIAL PARK	PARK
1003	MUNICIPAL PARK	PARK
1004	CONSERVATION AREA	PARK
1005	NATIONAL HISTORIC SITE	PARK
1006	WILDLIFE/NATURE SANCTUARY	PARK
1007	EXHIBITION GROUNDS	PARK
2000	OTHER RECREATIONAL	RECREATIONAL
2001	HIKING/WALKING	RECREATIONAL
2002	BIKING	RECREATIONAL
2003	RIDING	RECREATIONAL
2004	SNOWMOBILE	RECREATIONAL
2005	SKIING	RECREATIONAL
2006	GOLF COURSE	RECREATIONAL
2007	PORTAGE	RECREATIONAL
3000	OTHER PRIVATE	PRIVATE
3001	TOWNHOUSE/CONDOMINIUM	PRIVATE
3002	SHOPPING MALL	PRIVATE
3003	TRAILER PARK	PRIVATE
3004	LOGGING ROAD	PRIVATE
3005	CEMETERY	PRIVATE
3006	ALLEY WAY	PRIVATE
3007	AIRPORT/HELIPORT	PRIVATE
3008	ABANDONED RAILWAY	PRIVATE
3009	INDUSTRIAL	PRIVATE
3010	FOREST SERVICE ROAD	PRIVATE
3011	REST AREA	PRIVATE
3012	SERVICE STATION	PRIVATE
3013	ABANDONED ROAD	PRIVATE
3014	COUNTRY CLUB	PRIVATE
3015	HOTEL/MOTEL	PRIVATE
3016	RETAIL/OFFICE	PRIVATE
4000	OTHER EMERGENCY SERVICES	EMERGENCY SERVICES
4001	HOSPITAL	EMERGENCY SERVICES
4002	FIRE ACCESS	EMERGENCY SERVICES
4003	EMERGENCY SERVICES ROAD	EMERGENCY SERVICES

Data Dictionary *(cont'd)*

Trail Classes, Types and Codes (con't)

TrailCode	TrailType	TrailClass
5000	OTHER EDUCATIONAL	EDUCATIONAL
5001	PRIVATE ELEMENTARY SCHOOL	EDUCATIONAL
5002	PUBLIC ELEMENTARY SCHOOL	EDUCATIONAL
5003	PRIVATE HIGHSCHOOL	EDUCATIONAL
5004	PUBLIC HIGHSCHOOL	EDUCATIONAL
5005	UNIVERSITY	EDUCATIONAL
5006	COLLEGE	EDUCATIONAL
5007	MILITARY SCHOOL	EDUCATIONAL
5008	SEPARATE ELEMENTARY SCHOOL	EDUCATIONAL
5009	SEPARATE HIGHSCHOOL	EDUCATIONAL
6000	OTHER GOVERNMENT	GOVERNMENT
6001	EXPERIMENTAL FARM	GOVERNMENT
6002	DEPARTMENT OF NATIONAL DEFENCE	GOVERNMENT
6003	CORRECTIONAL FACILITY	GOVERNMENT
6004	WEIGH STATION	GOVERNMENT
6005	PEDESTRIAN WALK WAY	GOVERNMENT
6006	POLICE TRAINING FACILITY	GOVERNMENT
6007	SEWAGE OR WATER TREATMENT FACILITY	GOVERNMENT
6008	NO PUBLIC ACCESS/BUS ROUTE	GOVERNMENT
7000	LIMITED USE ROAD: OTHER	LIMITED USE ROAD
7001	LIMITED USE ROAD: WINTER	LIMITED USE ROAD
7002	LIMITED USE ROAD: DRY WEATHER	LIMITED USE ROAD
7003	LIMITED USE ROAD: CART TRACK	LIMITED USE ROAD

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Data Dictionary *(cont'd)*

Tile Shape

Layer Location

\Streets*DATE_AREA*_**tile_shape**

Layer Structure

Field Name	Description
TILE_NAME	Image Tile Name
TILE_LABEL	Image Tile Numeric Label
X_CENTROID	Easting of the Tile Center
Y_CENTROID	Northing of the Tile Center

Layer Content

The Tile Shape file contains the polygon description of each image tile. It contains the tile name and gives the four corner coordinates for each tile. This file is provided to assist in determining what tile to look at a specific part of the delivered product.

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Appendix A: ESRI® File Extensions

Refer to the following table for descriptions of ESRI file extensions. All file extensions are not available for all DMTI products.

File Extension	ArcView	ArcGIS	Both	File Description
*.shp			x	Part of standard ESRI Shapefile
*.shx			x	Part of standard ESRI Shapefile
*.dbf			x	Part of standard ESRI Shapefile
*.aih	x			Part of Attribute Index
*.ain	x			Part of Attribute Index
*.sbn			x	Part of Spatial Index
*.sbx			x	Part of Spatial Index
*.avl	x			Legend Properties
*.lyr		x		Layer Properties
*.prj		x		Datum and Projection Properties
*.apr	x			ArcView Project file
*.mxd		x		ArcGIS Project file

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Appendix B: MapInfo® Professional File Extensions

Refer to the following table for descriptions of MapInfo file extensions.

File Extension	File Description
*.dat	Attribute Data
*.id	Graphic Index
*.ind	Attribute Index
*.map	Graphic Data
*.tab	Tab File
*.wor	Workspace

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Appendix C: Street Types and Street Directions[6]

Street Types

Street Types used in the CanMap® suite of products correspond to the standard abbreviations used by Canada Post. The Language column distinguishes between street types in English (E) and street types in French (F).

Street Type	Abbreviation	Language
Abbey	ABBEY	E
Acres	ACRES	E
Allée	ALLÉE	F
Alley	ALLEY	E
Autoroute	AUT	F
Avenue	AV	F
Avenue	AVE	E
Bay	BAY	E
Beach	BEACH	E
Bend	BEND	E
Boulevard	BLVD	E
Boulevard	BOUL	F
By-Pass	BYPASS	E
Byway	BYWAY	E
Centre	C	F
Campus	CAMPUS	E
Cape	CAPE	E
Carr	CAR	F
Carrefour	CARREF	F
Cul-de-sac	CDS	E
Cercle	CERCLE	F
Chemin	CH	F
Chase	CHASE	E
Circle	CIR	E
Circuit	CIRCT	E
Close	CLOSE	E
Common	COMMON	E
Concession	CONC	E
Côte	CÔTE	F
Cour	COUR	F
Cours	COURS	F
Cove	COVE	E

Street Type	Abbreviation	Language
Crescent	CRES	E
Corners	CRNRS	E
Croissant	CROIS	F
Crossing	CROSS	E
Court	CRT	E
Centre	CTR	E
Dale	DALE	E
Dell	DELL	E
Diversion	DIVERS	E
Downs	DOWNS	E
Drive	DR	E
Échangeur	ÉCH	F
End	END	E
Esplanade	ESPL	E
Estates	ESTATE	E
Expressway	EXPY	E
Extension	EXTEN	E
Farm	FARM	E
Field	FIELD	E
Forest	FOREST	E
Front	FRONT	E
Freeway	FWY	E
Gate	GATE	E
Gardens	GDNS	E
Glade	GLADE	E
Glen	GLEN	E
Green	GREEN	E
Grounds	GRNDS	E
Grove	GROVE	E
Harbour	HARBR	E
Heath	HEATH	E
Highlands	HGHLDS	E

[6] Source: Canada Post Corporation, The Canadian Addressing Guide, October 2002

Appendix C: Street Types and Street Directions *(cont'd)*

Street Type	Abbreviation	Language
Hill	HILL	E
Hollow	HOLLOW	E
Heights	HTS	E
Highway	HWY	E
Île	ÎLE	F
Impasse	IMP	E
Inlet	INLET	E
Island	ISLAND	E
Key	KEY	E
Knoll	KNOLL	E
Landing	LANDNG	E
Lane	LANE	E
Line	LINE	E
Link	LINK	E
Lookout	LKOUT	E
Limits	LMTS	E
Loop	LOOP	E
Mall	MALL	E
Manor	MANOR	E
Maze	MAZE	E
Meadow	MEADOW	E
Mews	MEWS	E
Montée	MONTÉE	F
Moor	MOOR	E
Mount	MOUNT	E
Mountain	MTN	E
Orchard	ORCH	E
Parade	PARADE	E
Parc	PARC	F
Passage	PASS	E
Path	PATH	E
Pines	PINES	E
Park	PK	E
Parkway	PKY	E
Pathway	PTWAY	E
Place	PL	E
Place	PLACE	F
Plateau	PLAT	E
Plaza	PLAZA	E
Port	PORT	E
Point	PT	E
Pointe	POINTE	F

Street Type	Abbreviation	Language
Private	PVT	E
Promenade	PROM	E
Quai	QUAI	F
Quay	QUAY	E
Ramp	RAMP	E
Rang	RANG	F
Road	RD	E
Rond-point	RDPT	F
Range	RG	E
Ridge	RIDGE	E
Rise	RISE	E
Ruelle	RLE	F
Row	ROW	E
Route	RTE	E
Rue	RUE	F
Run	RUN	E
Sentier	SENT	E
Square	SQ	E
Street	ST	E
Subdivision	SUBDIV	E
Terrace	TERR	E
Thicket	THICK	E
Townline	TLINE	E
Towers	TOWERS	E
Trail	TRAIL	E
Turnabout	TRNABT	E
Terrasse	TSSE	F
Vale	VALE	E
Via	VIA	E
View	VIEW	E
Villas	VILLAS	E
Village	VILLGE	E
Vista	VISTA	E
Voie	VOIE	F
Walk	WALK	E
Way	WAY	E
Wharf	WHARF	E
Wood	WOOD	E
Wynd	WYND	E

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Appendix C: Street Types and Street Directions *(cont'd)*

Street Directions

Street Directions used in the CanMap® suite of products correspond to the standard abbreviations used by Canada Post. The Language column distinguishes between street types in English (E) and street types in French (F).

Street Direction	Abbreviation	Language
East	E	E
Est	E	F
Nord	N	F
NordEst	NE	F
NordOuest	NO	F
North	N	E
NorthEast	NE	E
NorthWest	NW	E
Ouest	O	F
South	S	E
SouthEast	SE	E
SouthWest	SW	E
Sud	S	F
SudEst	SE	F
SudOuest	SO	F
West	W	E

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Appendix D: Cartographic Road and Rail Classifications

Carto #	Carto Name	Description
1	Expressway	Expressways and 400 series highways, e.g. Highway 401, Don Valley Parkway
2	Primary Highway	Primary Highway, e.g. Highway 7, Highway 11
3	Secondary Highway	Secondary Highways
4	Major Road	Major road or Arterial road, e.g. Bayview Ave
5	Local Road	Subdivision road in a city or gravel road in a rural area
6	Trail	Trails
10	Main	Main Railway and Transit Lines (includes segments of rail that are shared with transit)
11	Sidetrack	Sidetrack of Main Railway Route
12	Abandoned	Abandoned sections of Main Railway Route
13	Transit	Transit lines that are not shared with Railway lines
20	Ferry Route	Approximate travel route of Ferry
21	Ferry Ramp	Ferry Ramp
22	Ice Road	Approximate travel route of Ice Road
23	Ice Ramp	Ice Ramp
24	Ferry Route/Ice Road	Approximate travel route of Ferry/Ice Road
25	Ferry/Ice Ramp	Ferry/Ice Ramp

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Appendix E: Joining the rds Layer and rds_lut Table

To view the *AREA*rds data linked to the *AREA*rds_lut data the user must complete a manual join.

MapInfo

- Open both the *AREA*rds data file and the *AREA*rds_lut data file in MapInfo.
- Select 'Query'> 'SQL Select…'
- Complete the following query in the Query Menu *(See Figure 1)*
- Select * from *AREArds*, *AREArds*_lut where *AREArds*.UniqueId = *AREArds*_lut.Rds_Id
- 'Verify' the SQL query and if valid, press 'OK'.

Once the query result has been obtained you can then view the joined tables e.g. 'Joined_Results' via the Info Tool in the Map Window or through the 'Joined_Results' Table Browser.

To create a permanent join simply save the joined tables as a new MapInfo Table.

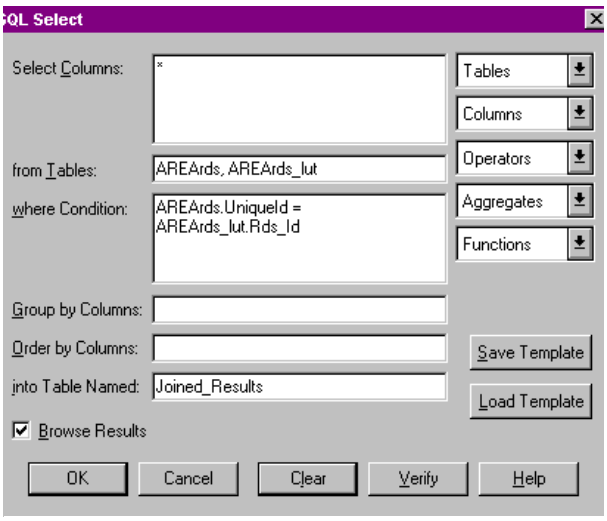

Figure ~~1~~6: Joining MapInfo Tables

ArcView

- With the project file open, click on the Window menu and select the project (AREArds.apr) to display the project window.
- With the project window now displayed select the 'Tables' icon. Click on the 'Add' button, locate and open the AREArds_lut data table you wish to join.
- With the AREArds_lut table displayed click on the field (Rds_Id) that will be used to join the AREArds_lut table to the AREArds data table. Now return to the View with the AREArds file.
- Click on the AREArds theme in the legend to make it active.
- Click on the 'Open Theme Table' button to display the AREArds attribute table (or choose Theme from the Table menu).
- Click on the field that will be used to join the AREArds data table (UniqueId).
- Finally, click on the Join button (or choose Join from the Table menu)

When you scroll along the *AREArds* attribute table you will notice the *AREArds*_lut data has been joined. Additional data tables can be joined, so that many table attributes can be shown at one time. To undo the joins between the data tables click on the *AREArds* attribute table making it active and from the 'Table' menu select 'Remove All Joins'.

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Appendix F: Joining the rds Layer and rds_lut Table *(cont'd)*

ArcGIS

- Open the appropriate project file (AREArds.mxd).
- Select the 'Add Data' button to open the corresponding attribute data file (AREArds_lut.dbf) you wish to join.
- Select the AREArds theme, right click and select 'Joins and Relates' selecting 'Join…' from the sub-menu of choices.
- Complete the 'Join Data' GUI as shown below using the UniqueId and Rds_Id fields as the common field between the tables. Once complete hit 'OK'.
- Once the join is complete select the AREArds theme, right click and select 'Open Attribute Table'. Once open, you can now scroll through the results of the join.
- Additional data tables can be joined, so that many table attributes can be shown at one time. To undo the joins between the data tables select the AREArds attribute table, right click and select 'Joins and Relates' selecting 'Remove Join(s)' from the sub-menu of choices. Select the table you wish to remove the join from the list provided (i.e. AREArds_lut.dbf).

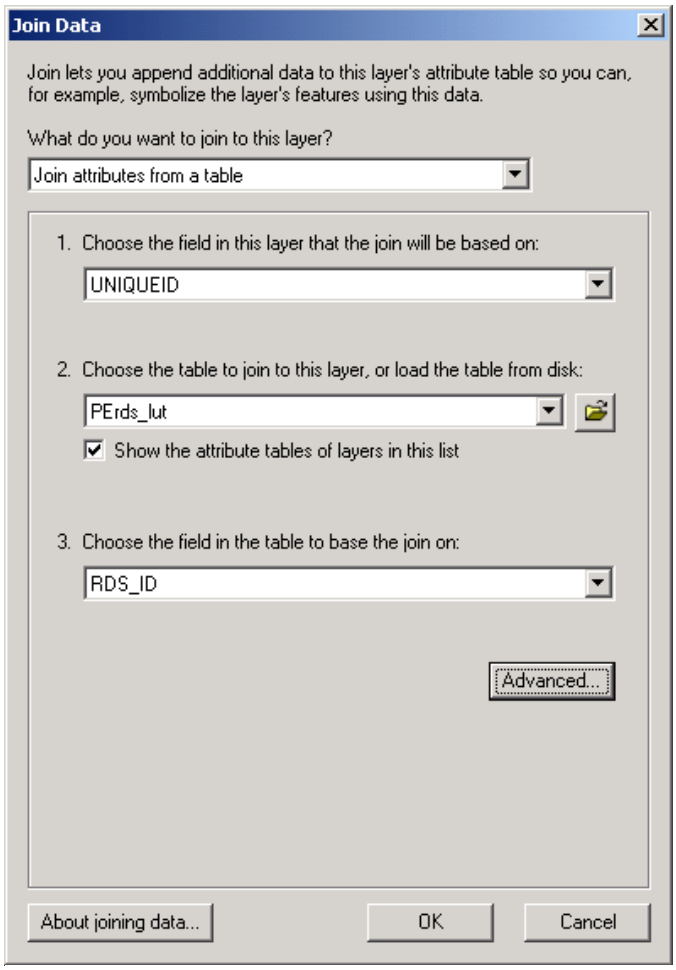
Join Data
Join lets you append additional data to this layer's attribute table so you can, for example, symbolize the layer's features using this data.
What do you want to join to this layer?
Join attributes from a table
1. Choose the field in this layer that the join will be based on:
UNIQUEID
2. Choose the table to join to this layer, or load the table from disk:
PErds_lut
Show the attribute tables of layers in this list
3. Choose the field in the table to base the join on:
RDS_ID
Advanced...
About joining data...
OK
Cancel

Figure ~~2~~7: Joining Layers in ArcGIS.

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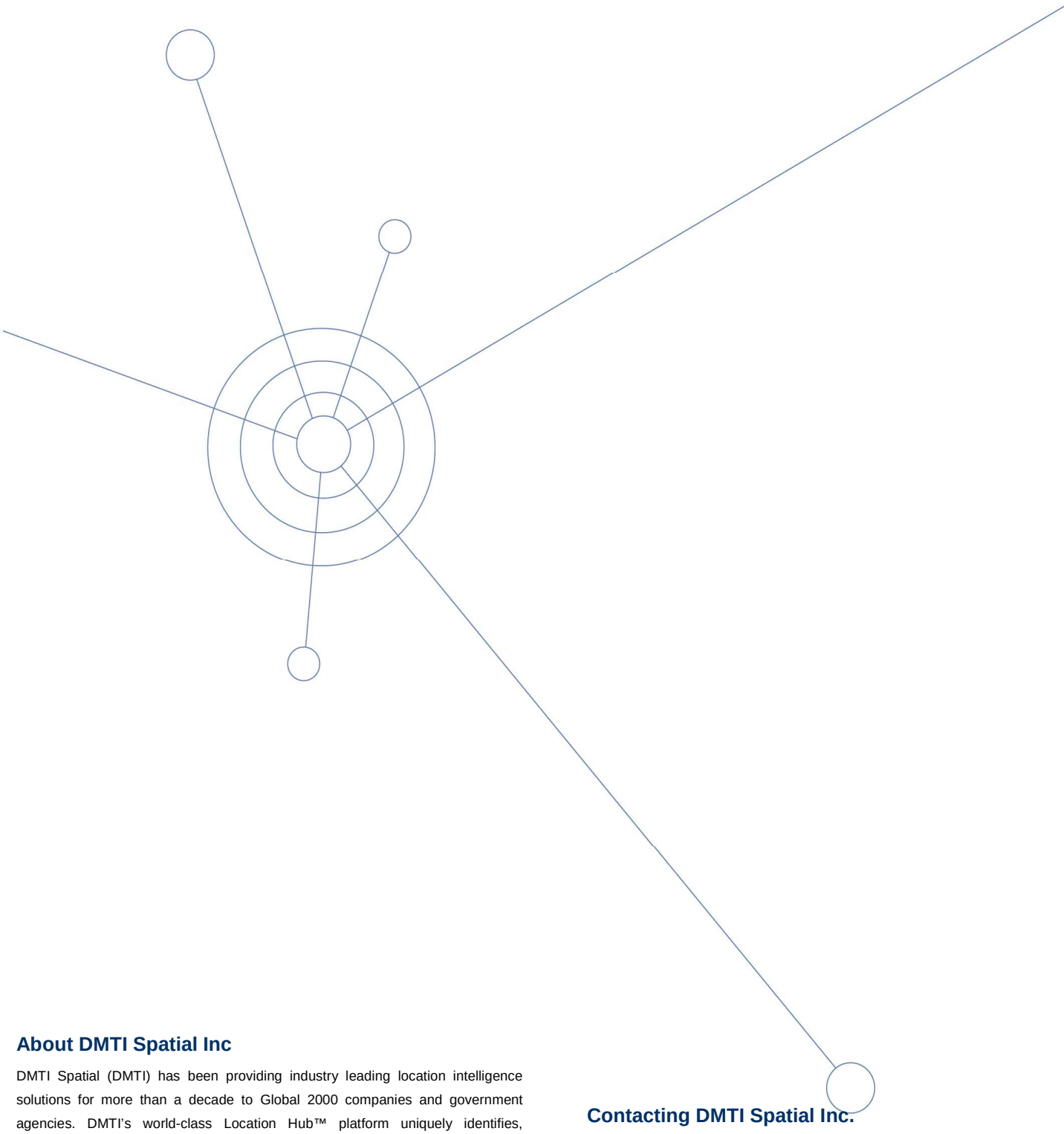

About DMTI Spatial Inc

DMTI Spatial (DMTI) has been providing industry leading location intelligence solutions for more than a decade to Global 2000 companies and government agencies. DMTI's world-class Location Hub™ platform uniquely identifies, validates and maintains a universe of location-based data. DMTI is the creator of the CanMap suite of geospatial data products, including CanMap® Streets and RouteLogistics, the gold standard for location data in Canada. DMTI also provides professional services and software tools bringing full solutions to the marketplace.

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